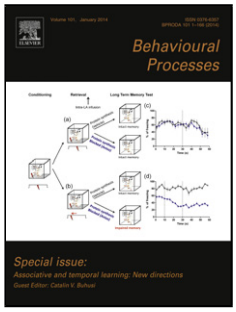
Accepted Manuscript



Title: Do you see what I see? The difference between dog and human visual perception may affect the outcome of experiments

Authors: Péter Pongrácz, Vera Ujvári, Tamás Faragó, Ádám Miklósi, András Péter

PII: S0376-6357(16)30340-0
DOI: http://dx.doi.org/doi:10.1016/j.beproc.2017.04.002
Reference: BEPROC 3429

To appear in: *Behavioural Processes*

Received date: 10-11-2016
Revised date: 12-3-2017
Accepted date: 5-4-2017

Please cite this article as: Pongrácz, Péter, Ujvári, Vera, Faragó, Tamás, Miklósi, Ádám, Péter, András, Do you see what I see? The difference between dog and human visual perception may affect the outcome of experiments.Behavioural Processes http://dx.doi.org/10.1016/j.beproc.2017.04.002

<AT>Do you see what I see? The difference between dog and human visual perception may affect the outcome of experiments

<AU>Péter Pongrácz[a*] ##Email##peter.pongracz@ttk.elte.hu##/Email##, Vera Ujvári[b], ##Email##vera.ujvari@gmail.com##/Email##, Tamás Faragó[c] ##Email##mustela.nivalis@gmail.com##/Email##, Ádám Miklósi[a,c] ##Email##amiklosi62@gmail.com##/Email##, András Péter[a] ##Email##bioandras@gmail.com##/Email##
<AU>

<AFF>[a]Department of Ethology, Eötvös Loránd University, Budapest, Hungary
<AFF>[b]Szent István University, Research Institute for Animal Breeding and Nutrition
<AFF>[c]MTA-ELTE Comparative Ethology Research Group, Budapest Hungary

<PA>Department of Ethology, Eötvös Loránd University, Pázmány Péter sétány 1/c, 1117

Budapest, Hungary.

<ABS-HEAD>Highlights► In many aspects, dog's visual performance is different from human vision. ► Our algorithm alters the color range, brightness and resolution arrangement of images. ► We tested humans with different visual cues, showing them in original and altered mode. ► Performance was weaker in case of directional eye glances showed in the altered setting. ► <ST>Experimental</ST> methodologies should take in consideration dogs' visual performance.

<ABS-HEAD>Abstract

<ABS-P>The visual sense of dogs is in many aspects **different** than that of humans. Unfortunately, authors do not explicitly take into consideration dog-human differences in visual perception when designing their experiments. **With** an image manipulation program **we altered** stationary images, **according to the present knowledge about dog-vision**. Besides the effect of dogs' dichromatic vision, the software shows the effect of the lower visual acuity and brightness discrimination, too. Fifty adult humans were tested with pictures showing a female experimenter pointing, gazing or glancing to the left or right side. Half of the pictures were shown after they were altered to a setting that **approximated** dog vision. Participants had difficulty to find out the direction of glancing when the pictures were in dog-vision mode. Glances in dog-vision setting were followed less correctly and with a slower response time than other cues. Our results are the first that **show** the visual performance of humans **under circumstances that model** how dogs' weaker vision would affect their responses in an ethological experiment. We urge researchers to take into consideration the differences between perceptual abilities of dogs and humans, by **developing** visual stimuli that fit more appropriately to dogs' visual capabilities.
<KWD>Keywords: dog; ethology; human; visual perception

<H1>1. Introduction